In [ ]:

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# Assignment-6: Dictionary in Python
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1.Sum of all keys:
Write a program to calculate the sum of all keys in the dictionary:
d = {1: 1, 2: 2, 3: 3, 4: 4}
----------------------------------------------------------------------------
2.Sum of all values:
Write a program to calculate the sum of all values in the dictionary:
d = {1: 1, 2: 2, 3: 3, 4: 4}
----------------------------------------------------------------------------
3.Sum of keys and values:
Write a program to calculate the sum of both keys and values in the
dictionary:
d = {1: 1, 2: 2, 3: 3, 4: 4}
----------------------------------------------------------------------------
4.Create a custom dictionary:
Create an empty dictionary called user_data.
Allow the user to input key-value pairs.
Continue adding pairs until the user decides to stop.
Print the resulting dictionary.
----------------------------------------------------------------------------
5.Calculate total score:
Write a program to calculate and print the total score of all
students using the dictionary:
student_score = {1: 44, 2: 45, 3: 55}
----------------------------------------------------------------------------
6.Find odd and even keys:
Write a program to separate odd and even keys from the dictionary.
Count the total number of even and odd keys.
----------------------------------------------------------------------------
7.Find the greatest key:
Write a program to find the greatest key in the dictionary:

player = {7: "Dhoni", 12: "Kohli", 9: "Rohit", 89: "Bumrah"}
----------------------------------------------------------------------------
8.Find alternate items:
Write a program to extract alternate items (key-value pairs) from the
dictionary:
player = {7: "Dhoni", 12: "Kohli", 9: "Rohit", 89: "Bumrah"}
----------------------------------------------------------------------------
9.Find names starting with 'K':
Write a program to find all values that start with the letter 'K' in
the dictionary:
player = {7: "Dhoni", 12: "Kohli", 9: "Rohit", 89: "Bumrah"}
----------------------------------------------------------------------------
10.Merge two dictionaries:
Write a program to merge the following two dictionaries:
d1 = {1: "a", 2: "b"}, d2 = {3: "c", 4: "d"}
----------------------------------------------------------------------------
11.Check if a key exists:
Write a program to check whether a given key exists in the
dictionary:
d = {1: 100, 2: 200, 3: 300}
----------------------------------------------------------------------------
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12.Find the minimum value:
Write a program to find the minimum value in the dictionary:
marks = {"A": 85, "B": 90, "C": 75, "D": 95}
----------------------------------------------------------------------------
13.Find the maximum value:
Write a program to find the maximum value in the dictionary:
marks = {"A": 85, "B": 90, "C": 75, "D": 95}
----------------------------------------------------------------------------
14.Reverse key-value pairs:
Write a program to swap keys with values in a dictionary:

d = {1: "one", 2: "two", 3: "three"}
----------------------------------------------------------------------------
15.Remove a key from dictionary:
Write a program to remove a key (say key = 2) from the dictionary:
d = {1: 10, 2: 20, 3: 30}
----------------------------------------------------------------------------
16.Count frequency of characters:
Write a program to count the frequency of each character in a string
using a dictionary.
Example: s = "banana"
----------------------------------------------------------------------------
17.Square of numbers dictionary:
Write a program to create a dictionary where keys are numbers from 1
to 5 and values are their squares.
----------------------------------------------------------------------------
18.Dictionary length:
Write a program to find the total number of items in a dictionary.
d = {"apple": 5, "banana": 7, "cherry": 3}
----------------------------------------------------------------------------
19.Sort dictionary by keys:
Write a program to sort a dictionary by its keys.
d = {3: "three", 1: "one", 2: "two"}
```

In [1]:

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#1.Sum of all keys:
#Write a program to calculate the sum of all keys in the dictionary:
#d = {1: 1, 2: 2, 3: 3, 4: 4}

d = {1: 1, 2: 2, 3: 3, 4: 4}
# Sum of all keys
sum_keys = sum(d.keys())
print("Sum of all keys:", sum_keys)
```

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Sum of all keys: 10
```

In [3]:

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#2.Sum of all values:
#Write a program to calculate the sum of all values in the dictionary:
#d = {1: 1, 2: 2, 3: 3, 4: 4}

d = {1: 1, 2: 2, 3: 3, 4: 4}
# Method 1: Using sum() function
sum_values = sum(d.values())
print("Sum of all values:", sum_values)
```

```
Sum of all values: 10
```

In [4]:

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#3.Sum of keys and values:
#Write a program to calculate the sum of both keys and values in the
#dictionary:
#d = {1: 1, 2: 2, 3: 3, 4: 4}

d = {1: 1, 2: 2, 3: 3, 4: 4}
# Method 1: Direct sum of keys + values
sum_keys = sum(d.keys())
sum_values = sum(d.values())
total_sum = sum_keys + sum_values
print("Sum of keys and values:", total_sum)
```

```
Sum of keys and values: 20
```

In [5]:

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#4.Create a custom dictionary:
#Create an empty dictionary called user_data.
#Allow the user to input key-value pairs.
#Continue adding pairs until the user decides to stop.
#Print the resulting dictionary.

# Empty dictionary
user_data = {}

while True:
    key = input("Enter key: ")
    value = input("Enter value: ")
    user_data[key] = value

    # Ask user whether to continue or stop
    choice = input("Do you want to add more? (yes/no): ").lower()
    if choice == "no":
        break
print("Final dictionary:", user_data)
```

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Final dictionary: {'name': 'anand', 'age': '27'}
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In [6]:

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#5.Calculate total score:
#Write a program to calculate and print the total score of all
#students using the dictionary:
#student_score = {1: 44, 2: 45, 3: 55}

student_score = {1: 44, 2: 45, 3: 55}

# Method 1: Using sum() function
total_score = sum(student_score.values())
print("Total score of all students:", total_score)

# Method 2: Using loop
total = 0
for score in student_score.values():
    total += score
print("Total score of all students (using loop):", total)
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Total score of all students: 144
Total score of all students (using loop): 144
```

In [7]:

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#6.Find odd and even keys:
#Write a program to separate odd and even keys from the dictionary.
#Count the total number of even and odd keys.

d = {1: 10, 2: 20, 3: 30, 4: 40, 5: 50}
odd_keys = []
even_keys = []
for key in d.keys():
    if key % 2 == 0:
        even_keys.append(key)
    else:
        odd_keys.append(key)
print("Even keys:", even_keys)
print("Odd keys:", odd_keys)
print("Total even keys:", len(even_keys))
print("Total odd keys:", len(odd_keys))
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Even keys: [2, 4]
Odd keys: [1, 3, 5]
Total even keys: 2
Total odd keys: 3
```

In [8]:

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#7.Find the greatest key:
#Write a program to find the greatest key in the dictionary:
#player = {7: "Dhoni", 12: "Kohli", 9: "Rohit", 89: "Bumrah"}

# 7. Find the greatest key in the dictionary

# Dictionary
player = {7: "Dhoni", 12: "Kohli", 9: "Rohit", 89: "Bumrah"}

# Method 1: Using max() function
greatest_key = max(player.keys())
print("Greatest key:", greatest_key)
print("Player with greatest key:", player[greatest_key])
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Greatest key: 89
Player with greatest key: Bumrah
```

In [9]:

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#8.Find alternate items:
#Write a program to extract alternate items (key-value pairs) from the
#dictionary:
#player = {7: "Dhoni", 12: "Kohli", 9: "Rohit", 89: "Bumrah"}

player = {7: "Dhoni", 12: "Kohli", 9: "Rohit", 89: "Bumrah"}

# Convert dictionary into list of items
items = list(player.items())

# Take alternate items using slicing
alternate_items = dict(items[::2])   # picks 0th, 2nd, 4th... items
print("Original dictionary:", player)
print("Alternate items:", alternate_items)
```

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Original dictionary: {7: 'Dhoni', 12: 'Kohli', 9: 'Rohit', 89: 'Bumrah'}
Alternate items: {7: 'Dhoni', 9: 'Rohit'}
```

In [10]:

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#9.Find names starting with 'K':
#Write a program to find all values that start with the letter 'K' in
#the dictionary:
#player = {7: "Dhoni", 12: "Kohli", 9: "Rohit", 89: "Bumrah"}

player = {7: "Dhoni", 12: "Kohli", 9: "Rohit", 89: "Bumrah"}

# Extract values starting with 'K'
names_starting_with_K = [name for name in player.values() if name.startswith('K')]
print("Names starting with 'K':", names_starting_with_K)
```

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Names starting with 'K': ['Kohli']
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In [11]:

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#10.Merge two dictionaries:
#Write a program to merge the following two dictionaries:
#d1 = {1: "a", 2: "b"}, d2 = {3: "c", 4: "d"}

d1 = {1: "a", 2: "b"}
d2 = {3: "c", 4: "d"}

# Merge dictionaries
merged_dict = {**d1, **d2}
print("Merged Dictionary:", merged_dict)
```

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Merged Dictionary: {1: 'a', 2: 'b', 3: 'c', 4: 'd'}
```

In [1]:

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#11.Check if a key exists:
#Write a program to check whether a given key exists in the
#dictionary:
#d = {1: 100, 2: 200, 3: 300}


d = {1: 100, 2: 200, 3: 300}
key = 2
if key in d:
    print(f"Key {key} exists in the dictionary.")
else:
    print(f"Key {key} does not exist in the dictionary.")
```

```
Key 2 exists in the dictionary.
```

In [2]:

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#12.Find the minimum value:
#Write a program to find the minimum value in the dictionary:
#marks = {"A": 85, "B": 90, "C": 75, "D": 95}

marks = {"A": 85, "B": 90, "C": 75, "D": 95}
min_value = min(marks.values())
print("Minimum value in the dictionary:", min_value)
```

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Minimum value in the dictionary: 75
```

In [3]:

```
#13.Find the maximum value:
#Write a program to find the maximum value in the dictionary:
#marks = {"A": 85, "B": 90, "C": 75, "D": 95}

marks = {"A": 85, "B": 90, "C": 75, "D": 95}
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max_value = max(marks.values())
print("Maximum value in the dictionary:", max_value)
```

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Maximum value in the dictionary: 95
```

In [4]:

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#14.Reverse key-value pairs:
#Write a program to swap keys with values in a dictionary:
#d = {1: "one", 2: "two", 3: "three"}


d = {1: "one", 2: "two", 3: "three"}
reversed_dict = {value: key for key, value in d.items()}
print("Reversed dictionary:", reversed_dict)
```

```
Reversed dictionary: {'one': 1, 'two': 2, 'three': 3}
```

In [5]:

```
#15.Remove a key from dictionary:
#Write a program to remove a key (say key = 2) from the dictionary:
#d = {1: 10, 2: 20, 3: 30}


d = {1: 10, 2: 20, 3: 30}
key = 2
if key in d:
    del d[key]

print("Updated dictionary:", d)
```

```
Updated dictionary: {1: 10, 3: 30}
```

In [6]:

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#16.Count frequency of characters:
#Write a program to count the frequency of each character in a string
#using a dictionary.
#Example: s = "banana"


s = "banana"
freq = {}
for char in s:
    freq[char] = freq.get(char, 0) + 1
print("Character frequency:", freq)
```

```
Character frequency: {'b': 1, 'a': 3, 'n': 2}
```

In [7]:

```
#17.Square of numbers dictionary:
#Write a program to create a dictionary where keys are numbers from 1
#to 5 and values are their squares.

squares = {x: x**2 for x in range(1, 6)}
print("Squares dictionary:", squares)
```

```
Squares dictionary: {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}
```

In [8]:

```
#18.Dictionary length:
#Write a program to find the total number of items in a dictionary.
#d = {"apple": 5, "banana": 7, "cherry": 3}

d = {"apple": 5, "banana": 7, "cherry": 3}
```

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length = len(d)
print("Total number of items in the dictionary:", length)
```

```
Total number of items in the dictionary: 3
```

In [9]:

```python
#19.Sort dictionary by keys:
#Write a program to sort a dictionary by its keys.
#d = {3: "three", 1: "one", 2: "two"}

d = {3: "three", 1: "one", 2: "two"}
sorted_d = {k: d[k] for k in sorted(d)}
print("Dictionary sorted by keys:", sorted_d)
```

```
Dictionary sorted by keys: {1: 'one', 2: 'two', 3: 'three'}
```